

# **MEETING MINUTES**

## **NATIONAL COMMITTEE ON LEVEE SAFETY (NCLS): National Levee Safety Act, Title IX of the Water Resources Development Act of 2007 (WRDA)**

### **MEETING #3**

**5 November 2008 – 8 November 2008**

**Embassy Suites  
New Orleans, Louisiana**

### **EXECUTIVE SUMMARY**

These minutes cover the proceedings from the third meeting of the National Committee on Levee Safety (NCLS, referred to as “Committee”), which took place from 5 November 2008 – 8 November 2008. The meeting included the Committee’s voting and non-voting members, other support and technical staff from the United States Army Corps of Engineers (USACE), facilitators from SRA International, Inc., and various presenters.

#### **Voting Members in attendance:**

- Mr. Eric Halpin, Committee Vice Chair, USACE
- Mr. Bill Blanton, FEMA
- Mr. Don Basham, Private Sector
- Mr. Les Harder, Private Sector
- Ms. Karin Jacoby, Kansas City, MO
- Mr. Dusty Williams, Riverside County Flood Control District, CA
- Mr. Rod Mayer, State of California
- Mr. Mike Stankiewicz, State of New York
- Mr. Jon Sweeney, State of Arkansas
- Ms. Marilyn Thomas, Commonwealth of Kentucky
- Mr. Robert Turner, State of Louisiana
- Paul Perri, State of Colorado

#### **Non-voting members in attendance:**

- Mr. David Garcia, City of Dallas, Flood Control District
- Ms. Sam Riley Medlock, ASFPM
- Ms. Susan Gilson, NAFSMA

#### **Support staff in attendance:**

- Carol Sanders, USACE
- Ken Ashe, State of North Carolina
- Terry Zien, USACE
- Craig Kennedy, FEMA

### **Action Items:**

- Make reservations in Deerfield, FL at Embassy Suites. You can fly into West Palm or Fort Lauderdale, with Fort Lauderdale being the closest airport.
- Each Committee member needs to send Kathleen their shirt size by Friday, November 7. Kathleen will purchase one navy wind shirt per committee member with the Committee logo.
- Kathleen will arrange a flight time matrix and share with the group via email to facilitate coordinating rental cars.
- The Committee will hear from a Bureau of Reclamation speaker at an upcoming meeting.
- The Committee would like a briefing on the Risk MAP Program and other FEMA projects that tie into this effort. Include the incentives and disincentives of the NFIP (information on fees collected on NFIP. How much goes to FEMA and other states?)
- The Denver Roundtable meeting minutes will be posted on the Back Pack site.
- The Denver Roundtable meeting PowerPoint summary will be revised to summarize takeaway messages and summarize the discussion context and will be posted to the public web site.
- Research how the funding is distributed for the CAA \$200 million grant.
- The group is encouraged to review CAA legislation as an example.
- The group will revisit the governance issue for all recommendations.
- FEMA will provide definitions of current zones on DFIRMS.
- The Corps will provide a summary of the Corps R&D efforts on levees to Working Group 1.
- Continue gathering the crosswalk information for review and posting to the Back Pack site. This information will be condensed into one document.
- Sam will type up the CRS notes.
- Karin will type up the Denver meeting notes

## **Wednesday, 5 November 2008**

### **Opening and Reflections from Meeting 2 – Eric Halpin, Vice Chair**

Mr. Eric Halpin encouraged the Committee to review a *Time Magazine* article by Michael Grinwall that discusses infrastructure (including levees, dams, and dykes) and President-elect Obama's \$25 million infrastructure plan.

Mr. Halpin introduced new representatives to the Committee:

- Ken Ashe is a proxy sent by John Dormant for this meeting.
- Carol Sanders is the former chief of public affairs for the USACE and will be developing an external communication plan and Committee talking points. She will work with Work Group 2.
- Terry Zien is USACE support staff and will manage all the review comments to sort and distribute.
- Craig Kennedy is from FEMA and works on the USACE Levee Policy and Procedures team and is a non-voting member on Working Groups 3 and 4.

Mr. Halpin reported that the review team meeting went very well. The meeting had an incredible turnout of reviewers and received almost overwhelming positive comments about the Committee's direction and speed of progress. The most intense comments from the review team meeting focused on products developed from Working Group 1. The review team continues to submit comments, which will be collected, managed, and posted to the public web site by Terry Zien. Mr. Zien will also submit the comments to each working group depending on applicability.

Mr. Halpin reported that the Committee is essentially on schedule through this development process.

### **Agenda Review, Review of Action Items and Approval of Minutes from Meeting 1**

Today's agenda was designed to allow a broader conversation on review team comments. The review team meeting minutes are available in the meeting packet and the four comments submitted to date were made available to Committee members during the morning session. The Committee should consider if the review team meeting comments:

- Change the direction in which the Committee is headed
- Identify additional needs for data gathering
- Require further clarification.

The Committee received a briefing from the ad hoc gathering of experts at the Denver Roundtable and be able to discuss comments. The Working Groups broke into working sessions to discuss their topic. The meetings resumed in the afternoon beginning with report outs from Working Groups.

Thursday's agenda mimicked the Wednesday agenda by receiving Working Group recommendations. Friday included a tour of New Orleans levees and a presentation by the Mississippi River Commission. The presentation focused on systems approaches and delegations. Saturday morning included a recap of recommendations, decisions, and agreements to date.

Sam Riley Medlock was added to the agenda to provide a report out from the conference call with the Congressional Research Services (CRS).

The NAFSMA communications awards DVD was provided to the Committee for review.

### **Discussion of October 30, 2008 Review Team Comments**

The first review team meeting marked the beginning of the outreach exercise and an attempt to build support for the recommendations. Overall, it was reported that people who attended were engaged. Specific comments from the review team meeting were reviewed for the Committee.

- One comment concerned the communication of risk to people living along canal banks, noting that the Committee should not be communicating risk because it will affect business and development. The Committee discussed that it should not want to eliminate any group of structures or people when communicating risk within a levee protected area.
- A representative from the National Wildlife Foundation commented that the NCLS is an opportunity to include a broad variety of permit streamlining opportunities.
- Comments supported development of a levee classification system, but questioned how many classifications or categories need to be developed and whether the Committee was capturing the right parameters such as the number of people and depth (of flooding?).
- Review Team comments discussed the inclusion of canal structures. The Review Team observed that canals were included in the legislation, but expressed concern that this fact is not well known. The Bureau of Reclamation technical staff agree that the legislation includes canals; however, Bureau attorneys do not agree. The Review Team expressed that the Committee should not be constrained by outside interpretations, but rather make decisions on what is right. Another comment inquired whether power-house canals would be included.
- Similar to the NCLS, review team members also struggled with where levee safety ends and flood management starts.

### **Report Out from Ad Hoc Denver Roundtable**

*NCLS – Meeting Minutes*

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Mr. Paul Perri provided an overview of the comments received from an Ad Hoc Roundtable of experts held in Denver, on October 27<sup>th</sup>. It was an assemblage of local agencies and experts who were asked to participate in an open discussion about the development of a National Levee Safety program. The discussion centered on questions from Working Groups 3 and 4. Six questions were posed to the group for discussion:

- What is most important to include/address in a national levee safety program?
- What should not be a part of a national levee safety program?
- What possible programmatic and governance parallels may be drawn from other delegated programs?
- What funding options exist or should become available?
- What programs are best suited for regulation, incentives and/or disincentives?
- What role could local/regional, states and federal governments fulfill in administering a national levee safety program?

The following summary represents comments made during the Roundtable as well as comments from Committee members seeking further clarification on the Roundtable comments. These are comments from those persons who manage delegated programs that have not had the benefit of reviewing the Committee's products or resources. The Roundtable demonstrated that others concur with the Committee's thinking.

**Question:** What is most important to include/address in a national levee safety program?

- Federal agency coordination – all federal agencies dealing with levees need to be on the same page.
- Outreach programs – there is a need for consistent terms when communicating messages.
- Flexible framework and minimum standards
  - The comment made during the Roundtable was that people want to have the national program set the minimum standards, but that the program should be flexible for implementation to fit into current state laws and governance.
- Clear definition of what constitutes a levee -- a comment made during the Roundtable inquired how to consider transportation corridors that act like levees, but were not designed as levees.
- Bring levees up to a defined standard taking into account: age, maintenance, encroachment, changes in drainage
- Coordination with the NFIP – mapping is key to the program.
- Align the classification with the risk – Using New Orleans as an example, there is no room for failure, but risk levels change when you move into agricultural areas.

**Clarification:** The Bureau of Reclamation commented that the Committee needs to identify and prioritize its work in a similar manner to how the Bureau of Reclamation manages the Dam Safety Program. A classification should take into account risk and the population at risk.

- The Committee held a discussion on this Roundtable comment, acknowledging that the comment aligned with the current definitions and classifications being proposed. The Committee also discussed the possibility of moving to a tolerable risk classification system or having a target level of protection based on consequences.

The Committee discussed having the Bureau of Reclamation make a presentation on how it uses tolerable risk with dams. The conversation may include how the Bureau is considering tolerable risk for canals in the future. The Committee discussed the development of a national screening level risk tool.

**Question:** What should not be a part of a national levee safety program?

- Can not be a federally unfunded mandate
- Canals – a continuation of the debate between it being a part of the program or not a part of the program.
  - The Committee held a discussion on the potential inclusion of canals, acknowledging that several organizations, including the Bureau of Reclamation, agrees that canals should be included. The Roundtable expressed concerns that if all structures are included in the NLSP, the program will weigh the agencies down and slow them from getting anything done. The Committee discussed the need to consider including certain types of canals, similar to the process done with levee structures.
  - FEMA stated that they treat canals as irrigation canals and show them as providing protection, but lacking a safety program. FEMA does not look at the 1% event and assumes the water will stay in the canal. If FEMA maps a canal to the 1% event, typically it is more of a channel and does not hold water all the time. FEMA says levees are built differently and canals are even more different. There are some canals that are “accidental” structures versus an actual constructed canal.
- There needs to be flexibility in the program. Describing minimal standards is okay, but telling locals exactly how to implement is not a good idea.
- 100-year certification – the Roundtable discussed that it is not sustainable. Once a levee fails, it is a catastrophic failure.
- Use of federal low interest loans for maintenance as opposed to capital cost: federal low interest loans can go for long term ownership. Loans are not sustainable for O&M

**Question:** What possible programmatic and governance parallels may be drawn from other delegated programs?

- EPA storm water program is a good example of minimum standard with flexible framework . It has minimum program objectives and allows the regulated community to have some input on what measures they want to implement for their specific location.
- FEMA Risk MAP Program
- Dam and levee programs could either be in parallel or conflict. As long as there are very clear definitions of “levee” and “dam.”
- Federal grant programs
  - Idea is to be similar to how the National Dam Safety program operates
  - FEMA Community Assistance Program (seed dollars may be a good idea to initiate some action)
  - FEMA Cooperating Technical Partners (CTP)
  - HUD CDBG
- Does the governance of land use happen through FEMA mapping?
- Federal funding for repairs
  - The Committee discussed the comment on federal funding for repairs. The Committee stated that the recommendations on prioritization based on tolerable fix should be discussed under a separate Act (not the National Levee Safety Act). The Committee discussion mentioned the Bureau of Reclamation loan program, which provides up to 70% for canal structures, but the loan does not account for operation and maintenance. Additionally, there is pending legislation by Senator Jack Reed to fund maintenance on levees. Finally, the Dam Rehabilitation Act is a proposed Act to come under FEMA to use work to guide prioritization for funding. The Dam Safety Program would help prioritize where the money got sent.

**Question:** What funding options exist or should become available?

- A key challenge is that people mistakenly believe that they are often getting more money back if they do not have flood insurance than if they purchase NFIP insurance.
  - **Clarification:** This was a consensus comment among the group.

The Committee discussed this comment stating, that there is no disincentive (for what?) when you are not required to get flood insurance. A lender requires you to get insurance when you get your mortgage, but nothing requires you to keep it. When a disaster hits, community areas will receive government assistance. There seems to be a disconnect with FEMA about the incentives and disincentives of the NFIP. If you have flood insurance, you are getting back a certain amount of money based on your insurance policy. If you don't have insurance, you will not get nearly as much money as you would if you have flood insurance. This is a misunderstanding.

**Question:** What programs are best suited for regulation, incentives and/or disincentives?

- Tie the level of participation into the program with the indemnification.
- Indemnification against exemption from liability.
- USACE has posted recent white papers on indemnification on its public site.

**Question:** What role could local/regional, states and federal governments fulfill in administering a national levee safety program?

- All levels of government have to play a role in developing the program
- Each state is different, which ties to the need for a flexible program
- Program needs to reside in federal agency
- Providing a tax credit for living in a certified flood plain would be an incentive, but it would be difficult to implement.

**Conclusions and take away messages from the Roundtable:**

- Coordination between Federal, State and Local Agencies is important
- Coordination between existing programs is important
- Coordination on outreach is important
- Focus on only the top priorities (Age of Levee, Safety issues, Maintenance, Risk mitigation)
- Provide a clear definition of levee
- Provide a clear governance model
- Consensus that there must be a Federal home as back up to State delegated program
- Flexible program – there are different kinds of levees
- Tie minimum standards to indemnification
- No unfunded mandates (Look at FEMA Grant programs, Community Development Block Grant, Revolving Loan funds, Tax credits)
- Follow and complement existing risk and flood insurance maps
- Establish minimum standards but ensure flexible governance and no unfunded mandates.

## **Report out on Congressional Research Service Conversation**

Sam Riley Medlock provided a review of the Congressional Research Service (CRS) conversation on the delegation of programs and methodology. Members of the Committee held a conference call with four representatives from CRS, who identified the Solid Waste Disposal Act and Clean Air Act as pertinent legislative options the NCLS could consider as models.

### ***Solid Disposal Waste Act***

Section 9002c of the Solid Disposal Waste Act pertains to the underground storage tank (UST) program, which has program delegation and public safety issues. The UST program has ownership issues similar to the levee safety program. EPA sets up a permit for existing as well as new facilities, with interim status standards and phased closure – program elements that the Committee has discussed. No new construction of underground storage tanks unless the tanks meet new standards. A Trust Fund is set up for states, which get funding for overseeing administration and for cleaning up sites. The Trust Fund is funded through a one-tenth cent gas tax. The delegated entity can have its program approved program without adopting the exact language of the federal program. EPA can delegate the program to the states provided that the states meet the federal program milestones..

### ***Clean Air Act (CAA)***

EPA envisioned strong partnerships between state and federal programs, as evidenced by the statement of purpose in the CAA legislation. A \$200 million grant is distributed to states annually, which they use to administer programs. States and localities prefer to have their fate decided at the local/state level. The statute sets deadlines for standards to be met, and the state program needs to demonstrate how they will meet those standards. An approved State Implementation Plan (SIP) is tied to federal transportation funds for incentives. States are encouraged to work together within air sheds. State partnerships will work through metropolitan planning agencies, which must comply with all applicable state programs, to help develop a plan to manage the problem of air pollution.. There is also a provision for citizen suits. If you are affected by emissions, you can petition EPA for assistance. According to the CRS experts, it has been invoked only once..

### ***Lessons Learned from CRS***

The CRS reported on lessons learned and encouraged the Committee to think broadly. The CRS highlighted the Clean Water Act as an example of a flexible framework where specific elements of the program are laid out in the law; EPA outlines regulations, and the states implement. The Committee was encouraged to review the 1996 amendments to the Clean Water Act, which highlight voluntary programs where states are part of public-private partnerships. Research should also include reviewing the new economic stimulus package highlighting infrastructure.

If you are in a protected levee community and are concerned that you are not protected to the level of the Safety Act, you can petition for prospective injunctive relief, which would compel the owner to bolster the protection of the levee. This is a preventative measure.

The Committee should be cautious to not tie incentives exclusively to federal funds, as not everyone seeks funding from the federal government.

**Comment:** The Committee was informed that the House and Senate asked to be removed from the Committee review list. CRS was very open about giving advice and recommendations and looks forward to helping. CRS was very generous with its time and considerations and in its offer to provide further support in the future. It will not offer a legal opinion.

**Comment:** The federal government can not compel or force states to do anything, but can set up a scheme for it to be highly desirable to do so (e.g. incentives and disincentives).

**Comment:** One concern about citizen suits was that local governments may get left holding all the liability if states were protected under federal provisions. For example, a citizen could sue a local government for failure to provide a certain level of protection due to upstream development.

**Comment:** Citizen suits can also exert the needed pressure that forces elected officials to care about the issues and to provide local/state agencies the needed resources.

**Comment:** It was expressed that the Committee originally discussed looking at indemnification instead of citizen suit.

**Comment:** One consideration for levee safety is to add a fee to levee systems to direct local operations and maintenance. Another consideration is capping levee owner liability as an incentive to come up to standards. Congress is free to add a variety of ties to incentives. The Committee can consider providing incentives to join the program.

**Comment:** The provisions mentioned by CRS are some of the more contentious and expensive provisions. Source Water came in with a good amount of funding, but other programs carry issues where people view EPA as an enforcement agency. Some people feel that citizen suits could be brought without legislation.

**Question:** Was Community Development Block Grants (CDBG) discussed as a program mechanism that could be linked, or was it discussed to develop a levee type CDBG?

- **Response:** The discussion focused both on linking to HUD CDBG as an incentive or to develop a block grant.

## **Draft Recommendation Discussion/Working Group 1**

***Recommend that a National set of engineering procedures, standards, and criteria  
Be developed and adopted for common, uniform use by all  
Federal, state, and local agencies.***

**Question:** With the development of a National Code, are you setting a floor or a ceiling?

- **Response:** The Code would set a floor (minimum), but include an option for higher standards on a case-by-case basis. As long as you met the minimum standards, you could strive for a higher standard. This would address the interest in having flexibility in the standards. This should be called the *National Levee Safety Code*.

The Committee provided additional comments on this recommendation. The Committee cautioned that it will be likely to start with a lower threshold for standards during the initial development round. A stated challenge will be to look at all current standards and ask agencies with higher standards to scale back their current minimum standard to conform to the Code. The Committee also identified the need to define technical procedures to help provide clarity to the term “engineering procedures.”

**Question:** What would happen if we did not develop a National Code?

- **Response:** We would have the scenario that we have currently.

## **Main Steps for Implementation:**

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- The USACE should be charged with the lead responsibility and provided the necessary funding to develop and maintain the best available engineering policies, procedures, and criteria (to be identified by the *National Levee Safety Code*). The Committee recognized that establishing a national code should be done by a federal agency that would be equipped to maintain and manage the Code over time. The development effort would likely start with Corps policies, procedures, and criteria.. The Committee needs to consider what the decision criteria are/will be. The Code will consider the following items:
  - Levee inspections
  - Geotechnical explorations and site characterization
  - Geotechnical evaluations and analyses
  - Hydrologic and hydraulic analyses
  - Structural analyses
  - Seismic evaluations
  - Mechanical/Electrical components
  - Levee Penetrations (e.g. pipelines)
  - Construction administration & inspection
  - Operations & Maintenance (including vegetation management)
  - Encroachments
  - Security
  - Risk Analysis, including levee fragility evaluations
  - Performance Instrumentation
  - Residual Risk
  - Emergency Preparedness and Response, including Emergency Action Plans, Floodwarning Systems, and Floodfighting
  - Performance documentation following flood events
  - Interim risk reduction measures
  - Evacuation
  - Mapping and risk notification
  - Survey
- Developed Code should be linked to existing levee programs and uniformly adopted by all federal, state, and local agencies (instead of using FEMA or USACE code, use the National Code).
  - FEMA shall require that the Code be used for levee certification/accreditation
  - USACE shall adopt Code
  - State Levee Safety programs shall adopt Code
- Technical subcommittees should be formed to guide the development of the National criteria. These subcommittees would involve state, local, and private sector entities as well as participation by other federal agencies such as FEMA and Bureau of Reclamation. Each Technical subcommittee should be roughly composed of 33% state, 33% federal, and 33% local/private.
- Engineering procedures and criteria should be linked to levee classification for potential hazard and should incorporate concepts of tolerable risk
- The initial or interim guidance would generally be based on existing USACE criteria, but modified by each Technical Subcommittee. The interim guidance would be based on slightly modified Corps criteria while the long-term guidance is being developed.
- Over time, the Technical Subcommittee would develop improved criteria and look for best practices from other countries

- Engineering criteria and procedures should be reviewed by Independent Peer Review/Consulting Boards.
- Engineering procedures and criteria should be reviewed and updated on a frequency no less than once every decade.
- A Research and Development program should be implemented at the federal level.

**Comment:** A suggestion was made that the R&D program would be funded and run similar to the Dam Safety Program. The program should be implemented and housed at the USACE with support from other entities. Examples of R&D tasks could include developing innovative technologies for repairs and improved engineering methods that would lead to more reliable levees and more cost-effective approaches; technical and archival research; or dissemination of research products (technical manuals and guidelines, workshop and conference proceedings, training manuals, executive summary documents, brochures, etc..) to the levee safety community.

**Comment:** There should be consideration to measure the amount of risk reduction for each dollar spent. The R&D program should inform the standards, improve technologies and procedures over time, and better predict performance of a structure.

**Comment:** If some programs have a higher set of standards than the National Code, we must ensure we are measuring progress in such a way that we can compare all programs to the National Code.

**Comment:** Need to include all federal agencies, not just USACE and FEMA.

**Comment:** One comment concerned the need to develop a National Board to make decisions. There may need to be an entity above the Technical Subcommittee that represents the local, state, private, and federal entities, but the Technical Subcommittee may need to be composed of actual technical experts. There is a need to offer a transparent and open forum to participate, regardless of what level of participation you may get. We will never reach consensus, but we need to just develop some criteria and let the Corps take the input and move on.

**Comment:** One suggestion for representation was to 25% state, 25% federal, 25% local, and 25% private sector.

**Comment:** The Committee discussed these implementation steps by identifying a need to recommend certain criteria for hazard potential classifications. For instance, you could say those that have very high criteria will have 500 year protection, high will have 200 year protection, etc. We can either develop these classifications or suggest that they be developed by someone else. The discussion identified the need to make a distinction between the level of protection and tolerable risk. There is consideration for not including a level of protection, but that this would be a priority next step. Finally, it was recommended that the interim guidance could be based on hazard, but during the five year long term guidance development the classification can be focused on tolerable risk. Tolerable risk will factor in human life, but also economic damages and will be a longer term process.

### **Rationale for Recommendation:**

The above recommendation addresses Goal 2 in Title 9, Section 9003.

*Encouraging use of the best available engineering policies and procedures for levee site investigation, design, construction, operation and maintenance, and emergency preparedness*

There are several issues associated with a lack of uniform and up-to-date engineering procedures, standards, and criteria across U.S. Examples include:

- The USACE Levee Vegetation Management memoranda may be in conflict with California management standards (under development)
- There is a perception that some levee maintaining organizations are unwilling or financially unable to perform appropriate levee maintenance of completed projects, resulting in differing levels of maintenance on the ground.
- Some local levee maintaining organizations are perceived as not completing full or adequate periodic inspections of their levees.

**Timing:**

This recommendation should be initiated at the beginning of the NLSP and is essential for current ongoing work. We recommend setting up an Interim National Procedure within one year. A long-term national procedure would be set within 5 years, and a National update would be completed at a minimum of every 10 years.

**Agreement:** The Committee agreed to the proposed timing.

**Comment:** This could impact FEMA's NFIP significantly. We think FEMA is going to adopt the Corps standard of certification. The local community would have to apply at the certification time, but you could use the old standards while you are still in your certification time. A challenge will be when a certification is up for renewal a year or two after the national standards are set.

**Funding:**

- Lead by Corps and funded at the federal level through Corps' budget with a possible new budget line item. Consideration should also be given to using the Corps' current Guidance Update Maintenance Program (GUMP) to fund the development of interim procedures, standards, and guidelines.
- Participation by state, local, and private sector entities should be funded by those entities, with the exception that travel costs would be reimbursed by the federal government.

**Governance:**

The Working Group stated that the recommendation for governance will depend on recommendations on what the entire Committee recommends for overall governance structure. Some initial recommendations about governance for this recommendation include:

- The lead agency responsible for developing, maintaining, and updating National procedures, standards, and criteria should be the Corps.
- Mandatory participation of State, local, and private sector entities on the Technical Subcommittees and independent technical reviews will assure collaboration and encourage national acceptance. Requirements for adopting national Code will need to be legislated.
- The requirements for adopting National procedures, standards, and criteria will need to be legislated
  - Require new regulations for Corps authorities and practice
  - Require modifications to CFR 65.10 for mandatory use of National procedures, standards, and criteria for levee certification

- Require modifications to federal regulations to require adoption by the Bureau of Reclamation for canal structures
- Require legislation for delegated State Levee Safety Programs to adopt National procedures, standards, and criteria to qualify for delegation.

**Leverage and impacts:**

- Establishes a single, uniform National set of procedures, standards, and criteria for both federal and non-federal use.
- Requires federal agencies to modify internal policies and practices to adopt National procedures, standards, and criteria.
- Requires that State Levee Safety Programs adopt National procedures, standards, and criteria.
- Requires local communities to adopt National procedures, standards, and criteria to be eligible for the National Flood Insurance Program.

**Metrics:**

- Interim National set of procedures, standards, and criteria to be developed within one year.
- Long-term National set of procedures, standards, and criteria to be completed within 5 years.
- Annual report to Congress by the Corps on status regarding development, implementation, and updates for National set of procedures, standards, and criteria.
- Annual report to Congress by the Corps on status of adoption by State Levee Safety Programs.
- Annual report by Bureau of Reclamation on adoption of National set of procedures, standards, and criteria for canal structures.
- Annual report by Corps on status of legislation and modifications to regulations necessary for full implementation of the National set of procedures, standards, and criteria.

**Comment:** The Committee provided feedback that generally this was a good recommendation. There was support for developing and adopting a National Code.

**Comment:** There was a reiteration of a previous comment to not adopt the Corps 90% parameter for 100 year protection. While calculating the 100 year event outright is an example of a good procedure, procedures, standards, and criteria do not imply protection.

**Comment:** The uniform set of documents and standards needs to be encompassed in the background of the strategic plan.

**Comment:** The document should discuss that the Committee believes the level of protection does not factor into the development of standards.

**Comment:** Federal and National are not interchangeable. Who does the national role?

**Comment:** Just because there is a national program that does not mean there is a national body outside of the federal, state, and local levels.

**Comment:** The annual reports would serve as a performance monitoring to show progress and have Congressional oversight. Depending on the agreed-upon governance structure, the annual report could be to a National Board. The annual reports will ensure caring about the results of this program over time.

**Comment:** There could be issues with the authorization for the Corps to use GUMP.

## Draft Recommendation Working Group 2

Working Group 2 provided a preliminary recommendation for consideration by the Committee.

***Recommend the establishment of a standing committee of the National Levee Safety Board on public education and awareness.***

**Assumption:** There will be a creation of a national board.

### Main Steps of Implementation:

To address “communication of residual risk”

- Develop standardized terminology that can be used to effectively communicate complex risks to the public, particularly to people living in levee protected areas.
  - Identify new and effective terms and methods to communicate risk
    - The recommendation will move risk communication away from a discussion of level of protection and will allow for the public to make better informed decisions.
  - Research and test the effectiveness of proposed terms and methods
  - Disseminate to end users
- Shall establish best practices for communicating with the public
  - Establish roles and responsibilities of partners (federal, state, local)
  - Foster transparency
  - Identify most effective media resources based on targeted audience

### Rationale:

- Existing approaches are not working effectively.
- It is not just about communicating risk, it’s also about giving people options to change their behavior.
- This is getting people to think about this topic in a fundamentally different way.

The Committee discussed the proposed recommendation and component pieces. There is hope that if people understand their risks better, they will make more informed and better decisions to change their behavior.

**Comment:** This is a national security issue that also needs to be considered as a message.

**Comment:** This is a solid recommendation, but is this as bold as we want to get on residual risk? At what level of detail do you intend to develop this recommendation? Will you develop more detail on roles and responsibilities, messages, etc.

- **Response:** The Working Group does not feel we will identify the terms that will be used to define residual risk. The terms can be identified and recommended to someone else to define the terms, which will factor in the lack of residual risk across the country.

**Comment:** Was there discussion on modifying goal 6 to broaden from living in levee protected area.

- **Response:** Living is a broad term that covers all aspects of people interacting in levee protected areas.

**Comment:** This recommendation would be started immediately upon the formation of the board. We can start identifying terms and methods to communicate the risk. Actually identifying the risk will take some time and will evolve over a long period of time. There is a need to start something meaningful upfront in a common language. Need a way for stakeholders to understand risk consistently across areas.

**Comment:** When discussing implementation steps for this recommendation, need to identify who would be represented on the subcommittee.

**Comment:** Public includes all stakeholders, including local government, but this specifically refers to Goal 6 (stakeholders are those that live in levee protected areas).

**Comment:** Consider all seven elements in developing this recommendation.

## **Discussion on Upcoming Speakers**

The following discussion identified additional speakers and information the Committee is interested in obtaining to help with the development of the strategy document.

### ***November 17-21, Deerfield Beach, Florida***

*Peter Mitchell* – General concepts of risk communication and how does risk communication differ from other outreach.

- What does he think are the elements of a good risk communication plan?
- What are the tools and strategies for maintaining the attention in a non-disaster period?
- How do you maintain high level evacuation readiness and know you have a high level without actually evacuating?
- What makes people or government react positively or negatively to incentives?
- What is the difference between carrots and sticks in risk communication?
- What are the best and practiced organizations for risk communications? Who is doing it well?
- How do you impact individual action?

*Carol Collier* – Evolution of the Delaware River Basin Commission, authorities, structure, programs, governance.

- What are the strengths of the DRBC?
- What are limitations of the DRBC that you suggest we avoid? What doesn't work well? What inhibits your effectiveness? Suggest improvements? National? Regional?
- How might organizations like DRBC be helpful in implementing a NLSP?

### ***December 9–11, 2008, NCC***

*Tracy Mehan* – former Assistant Administrator for Water, U.S. EPA

- How might a NLSP be funded?
- What are some models/adoptions for “delegation” you might suggest for a levee safety program?
- What happens when you can't delegate? Defaults?
- What are your overall suggestions for governance for a NLSP?
- How do you see levee safety issues fitting with other aging infrastructure issues? Funding? Clean Water Trust Fund modified to include levees?
- Looking back, what would you do differently with State Revolving Loan Fund?

*Len Shabman* – overview of chapter 6 of the Hurricane Protection Decision Chronology

- Lessons learned for a systems-wide approach?
- What would you do differently in a safety program to combat incremental decision-making?
- Speak to general governance issues?
- Who could have made the New Orleans outcome different?

### ***Possible Additional Speakers***

*Enrique Matheu (DHS)* – Dam Sector, which includes levees and can give an overview of government policy of physical and information security. Physical integrity is a goal for the NLSP – how might we interact with DHS dam sector? Programs, people?

- How is liability managed within the Safety Act of 2002?
- Public right to know versus security? Any ideas on standards?
- Are there lessons from other sectors that we can apply?
- What physical and procedural security measures are being considered (or could be used) as standards?

*Diane VanDeHei* – Association of Metropolitan Water Policies

- Balancing the public right to know versus security?

*Interagency Levee Task Force (ILTF)* – Questioning the rebuilding of levees in the traditional way or spending the money differently. Looking at non-structural alternatives or decommissioning levees.

- How does levee safety fit in with broader flood risk management objectives?
- What linkages, if any, does the NLSP have with the broader flood risk management world?
- Reactions from the states on participating in the ILTF?
- Understanding of the nature of the task force (voluntary, funded, criteria for decision-making, best practices)
- How can the Task Force inform our understanding of levee performance?

*FEMA* –Some of this information will be presented in a white paper as summary points.

- What is Risk MAP? Where is it going? What are some of the details? How can it be linked to levee safety? How does that relate to national levee safety program?
- More detail on the incentives and disincentives relationships between FEMA's programs and national levee safety program (disaster relief, NFIP, CRS, CTP, HMGP).
- How well is the seed money in community assistance program working?

## **Thursday, 6 November 2008**

### **Logistics**

- December 8 is a travel day with the committee meeting on December 9-11, 2008 at the National Conference Center (NCC). Committee members can stay Friday night December 12 as needed for travel plans.

*NCLS – Meeting Minutes*

*Meeting #3: 5 November 2008 – 8 November 2008*

- The Review Team meeting will be December 12, 2008, at the National Conference Center. Kathleen will provide a list of hotel options in the area for Review Team members.
- The Review Team October 30 meeting comments are continuing to be received. The work groups are encouraged to review the comments which are compiled on the Back Pack site under Review Team.
- Friday, November 7, 2008, conference call number is 504-525-1993 Operator to PBX John Lafitte Ballroom

### **Draft Recommendation Working Group 3&4**

The Working Group provided an overview of an initial recommendation for the Committee's consideration. For a future discussion, the Work Group will align the rationale with the steps for implementation. The recommendation addresses Question 1.1 (What activities and programs would be important to include in the NLSP), specifically addressing the topic of levee mapping.

***The Working Groups recommend that FEMA's flood hazard mapping program should be augmented to support the NLSP.***

**Comment:** The recommendation is not suggesting that FEMA create the data; it recommends that FEMA obtains the data.

#### **Main steps of implementation:**

- Identify levee systems, including structures along canals, and the zone of consequence associated with their failure. (No change to DFIRM)  
**Comment:** You will create confusion on the definition of 1% versus zone of consequences.
- Use special zones to communicate flood risk associated with levee failure (i.e., AL or XL). (Change to DFIRM)  
**Comment:** The focus needs to be on communicating risk behind the area, not creating a special zone for mapping. The development of a new special zone gives the impression from the local perspective that it is a regulatory action.
- Depict on FEMA's website additional flood hazard information (i.e. 200-year and 500-year floodplain maps) that may be provided by local/regional/state entities. (No change to DFIRM)  
**Comment:** The Working Group should think more about the timing of obtaining and displaying the data. The idea is to feed in information as it becomes available to display as a layer for the FEMA maps.

This should be carried out following the standards established through the effort led by the Corps and depicting the consequence areas mapped by the Corps through the NLD.

#### **Rationale:**

FEMA is best positioned because:

- FEMA maps are sources that local/regulatory/state entities go to make decisions.
- Web site is accessed by real estate professionals and mortgage lenders in reviewing property purchases.



- Need to make it easy for all data to be in one place for people. Information can be pulled in easily to the current FEMA web site set up. FEMA would be a convenient location to house additional information. This is also a benefit from an outreach perspective.
- Identification of zones of consequence associated with levee failure; hazard classifications; properties targeted for public outreach, funding, evacuation planning, mitigation, etc. This will set the boundaries for application of the levee safety program.
- Identification of special flood hazard zones associated with potential catastrophic levee failure for public awareness efforts. (Key item to communicate flood risk and levee safety.)
- Identification of limits of protection provided by levee and residual risk if greater than 1 in 500-year chance.

#### **Timing:**

- It is critical that this happen early in the development of NLSP as it is needed prior to implementation of many expected program elements; however, this first requires the development of technical standards and procedures for identifying zones of consequence and associated flood depths.
- An interim mapping element for this would not be cost effective and it is likely to create much confusion.
- It would take approximately # years for the Corps to complete the National Levee Database (NLD) zones of consequence for all levees throughout the nation, depending on cooperation of the states.  
*Comment:* This relates to the recommendation made to expand what the Act says in 9004 about only looking at federal levee and expand to all levees without requiring cost share.  
*Comment:* We want one database housed and managed in one area. The inventory is the collection of data and how that is done.

The Committee discussed whether the NLD would be completed by the Corps with a waived cost share. The Committee agreed that the non-federal levees should be included in the database, but there is still discussion on whether the states should do the inventory and whether it should be cost-shared. The Committee tasked Working Group 1 with considering if additional data should go into the database.

#### **Funding:**

- Federal appropriations to map levee systems, including structures along canals and area of consequence associated with a failure.
- Federal appropriates for AL and XL one designations on DFIRMS
- Fund paid into to maintain and manage and depict the additional flood hazard data on FEMA maps prepared by local/regional/states. This is not the NLD piece

#### **Governance:**

- Oversight is same as current FEMA mapping programs
- Combining of data sources could be incentivized, others will require legislation (creating other zones, show zones of consequence).

#### **Authorities:**

- Existing authorities include FEMA's CTP program and the Corps' authority under WRDA 2007, Section 9004.
- Corps authority needs to be modified to not require a nonfederal cost share to complete the NLD.

#### **Leverage:**

- Yes, FEMA's mapping program.

**Metrics:**

- Percent of nation covered per year from a mapping perspective or, if not quantifiable, percentage of states completed per year.

**Comment:** The proposal is to reflect the zone of consequences in digital form? Yes.

**Comment:** Currently, 50% of the nation is covered by DFIRM maps. At the end of map mod, FEMA's goal is to have 65% of the geographic area digitally mapped (2010-2011). There will not be a comprehensive source for some time to tie this recommendation into.

**Clarification:** FEMA printed and scanned maps are used heavily. FEMA is still crossing the hurdle of getting people to use digital maps. FEMA continues to try to push this issue.

**Comment:** There are towns that report not having computer access and therefore not being able to access DFIRMs. This is anecdotal, so unclear how widespread of an issue.

**Comment:** This recommendation could help drive the use of the digital maps. In the long run, communities won't have a choice. It is a hard battle to move away from paper maps. We are still trying to create the momentum.

**Comment:** One of the struggles with the FIRMs is to make the maps visible on the FEMA web site. Additionally, what is the mechanism to print the maps so that it could still be used by towns?

**Comment:** Is FEMA going to maintain these digital maps forever so that when areas are updated, FEMA will update the digital maps?

- **Response:** FEMA will continue to maintain the DFIRM database and update it to the FEMA web site.
- **Response:** Some states have discussed preferring to house the mapping data and update it at the state level.

**Comment:** What is the rationale for not reflecting the zones of consequence in the FIRMS or DFRIMS?

- **Response:** It is a flood insurance rate map by intent. By legislation, we could change the purpose of the map.
- **Response:** The intent is a flood insurance rate map, but in application it has developed another use. FEMA forces standards to use the map to make land use decisions. Higher standards were put in place, which are now the rules for development.

**Comment:** Public awareness committee needs to be capturing this issue because every day organizations are using those FIRMS to make decisions on land use decisions.

- **Response:** The Committee needs to make an informed decision concerning whether to represent the zone of consequence on the map. If the Committee decides not to provide the data on the FEMA maps, there should be consideration for other ways to provide the data.
- **Response:** There is support for having the FEMA mapping effort keep momentum and stay on its current track. Changes to FEMA mapping would drastically change the program.
- **Response:** One proposal is to consider revising the standard/model ordinance as a tool for data use instead of making the map the tool.

**Comment:** Where is the Risk MAP effort going? North Carolina is putting all other hazards around the primary data on flood insurance.

- **Response:** There has been discussion on how to serve up the other information.

**Comment:** The purpose of this recommendation proposes that all other information would be a separate layer that ties into the risk map, but would not go on the DFIRM map.

**Comment:** There are many data layers that people can use. The Corps maps pull in FEMA's maps, DHS critical infrastructure, weather.

**Comment:** Local governments rely on the DFIRMS almost exclusively for flood risk management. Local governments can only use data that they authorized to use. They can not use anything else if they were not authorized and could get sued by a developer if they try to do so. Communities would have to go back in and revise all ordinances. The likelihood of a community implementing requirements associated with additional FEMA data is increased by use and proximity to the DFIRM maps. It puts all the information in the place where all the decision makers are already going.

The Committee had a lengthy discussion about the use of data in mapping efforts as related to this proposed recommendation. The Committee felt this was a viable proposal and worked to clarify some of the details. The following list represents some of the ideas posed to the Committee and Working Group for further consideration. The ideas and suggested listed below were offered for consideration to further develop the recommendation. They represent the view points of specific Committee and not a consensus or majority opinion by the Committee at large:

- If the standard ordinance was amended, it should say best available data, which is a political decision, and does not mean that the local entity will adopt it or adopt it soon.
- We have to make an intentional decision to put the zone of consequence on FIRM or leave it as a layer. If the data was put on the map, does that give us a hammer for communities to use it?
- Ordinances do not currently recognize zone of consequence.
- Information is constantly being made available. As the information is obtained, there may be other mechanisms to consider for getting the data out at a more global level then having the limitations of using the mapping effort.
- We need to educate the decision makers around the appropriate use of FIRMS and other sources to use to make flood risk management decisions.
- NFIP reauthorization is in Congress and Senate. A Senate version states that areas will be designated special flood hazard areas. These efforts should be in parallel.
- Some of the communities that have the most information available have taken an aggressive approach and put their own resources into the effort.
- When the National Levee Database goes public, all the federal levee data and information will be available.
- Including the XL and AL would not be a remapping effort, just a renaming effort from an application standpoint. Creating a zone is a regulatory effort. The recommendation to develop the AL or XL zone is a further definition, but is not a new task or authorization.
- The designation will provide occasion for a new dialogue with developers and communities that there is a risk.

**Comment:** How is the zone of consequence defined?

- **Response:** We altered what we were previously defining as the levee protected area. It is the area that would be inundated if the levee would fail with water at the top of the levee.

- **Response:** Need an agreed-upon terminology, but this was a first attempt and it is consistent with the NLD.

**Comment:** The process needs to account for flexibility to include technologies to be used in the future. We will have to create ways to communicate this information and make it widely available to the public.

**Comment:** Where do we want to point people? We do not want to mix messages here.

- **Response:** People are already using the FEMA data source. Since they already go to FEMA, the web site should be used as a tool to give them some information, but direct them to other sources. The FEMA web site does not need to only house the data. We want to change what the public sees and to allow the public to get a more complete picture.

**Comment:** The zone of consequence would not be identified on the DFIRM, while the “L” would be to help identify the area behind a levee. The use of the “L” puts the issue in front of those that make decisions about purchasing land. Those in the “L” zone should care that they are protected by a levee.

**Comment:** The Committee discussed whether a change to the model ordinance should be considered to help communicate information for people to use as the basis for land use decisions. The model ordinance is tied to land use, permitting, and inspections. There are variations regarding what tools communities use to make land use decisions. If the zone of consequence is added to the DFIRM, local entities do not have to make changes for the model ordinance because it already directs them to use the DFIRM. Another consideration for the “L” on the map would be to set the stage for setting gradual insurance rates.

**Agreements:**

- FEMA mapping program is a good place to house in perpetuity the new or revised consequence data set because it is a place where people already go, has some ordinance information associated with it, and is easy to use.
- Agreement from the Committee to pursue further development of this recommendation.

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## **Draft Recommendation Working Group 3&4**

### ***Recommend that certain program elements should be administered at the national level.***

The following are examples of some program elements that should not be delegated because they should be housed at a national level (this is not a comprehensive list). For instance, levee inventory and flood plain mapping may have other components at the state or local level, but the national effort should be found in one place. This list represents the establishment and maintenance of standards.

- Engineering design standards/criteria/procedures
- Development of risk assessment/analysis guidance (execution could be delegated)
- Development of Inspection policy
- Holding National Levee Inventory (housing a national levee database – national administered)
- Delegation to qualified state/other
- Default in absence of delegation to qualified entity
- Existing Federal Floodplain Mapping (housing at a national level – nationally administered)
- Technical training and assistance

**Comment:** Levee inventory could be delegated to the states.

### **Main Steps of Implementation:**

- Legislation authorizing national implementation entity and lead federal agency (either develop a National Board and/or designation of a Federal Agency)
- Need for funding for national program implementation
- Plan for implementation, which is what the strategic plan would include

### **Rationale:**

- Certain program elements would be best administered *uniformly and consistently across the nation*.  
**Agreement:** This is the right concept to shoot for – uniform and consistent.

- State/local development and administration would be duplicative and inefficient

**Comment:** Is this the right concept to shoot for?

- **Response:** Design standards need to be done at the national level and across the board, arguably resulting in greater efficiency and effectiveness. The Corps standards will be close to the national standard.
- **Response:** Affordability of a national standard is going to be an issue to be tackled.

### **Timing:**

- Establishment of a national program entity must precede and lead implementation of other recommendations.
- Full implementation of nationally administered elements must follow development of engineering standards, etc.

### **Funding:**

There are three categories of funding. We are largely discussing the base administration funds. Tax, fee, and Trust Fund are less likely than federal line item.

- Federal funding
- Tax, fee, surcharge
- Dedicated fund, trust fund

### **Governance:**

- National board or designated federal agency will be the governing body for the national program
- Possible periodic report to Congress or independent review

### **Authorities:**

- Some existing federal authorities may be used to partially accomplish some national elements (authorities from FEMA, Corps)
- New authorities will be needed for basic national program implementation

### **Leverage and Impacts on Other Programs:**

- Uniform national administration will require changes or adaptation in numerous federal, state, and local programs and efforts.

### **Metrics:**

- Number of levee systems in conformance with national program

- Percentage of levees with full data included in national inventory
- Currency of policy and guidance documents

**Comment:** The Committee needs to make a decision as to whether we are looking at a national board or a federal agency.

**Comment:** You could have a national board which delegates all floodplain mapping to FEMA and Corps.

**Comment:** The Committee should be looking at a risk-based approach to put more emphasis on high populated areas where things will need to be done but not necessarily done in low population areas.

**Comment:** Design levees to current land use, but in years when development and land use changes, we need to address a mechanism over time to address an assessment of risk prior to new land use.

**Comment:** The changes to be recommended by the group will affect the way people view risk and also the cost for protecting against risk. A risk-based assessment may encourage a consideration for not building the levee to provide greater risk protection than it does currently.

**Comment:** A huge unintended but potentially beneficial consequence would be that the standards could help control the development in floodplains.

**Comment:** Where would the requirement exist to ensure that new development is meets the national standard for the levee?

- **Response:** These types of concepts do not put the government in the position for what you can use the land for, it dictates a safety standard.
- **Response:** Should the committee be being making recommendations about national land use?
- **Response:** The recommendation for a tolerable risk guideline will send a powerful message for land use decisions. This will include a large debate to set the tolerable risk guidelines.

**Comment:** What are the incentives for when a levee system does not meet standards; what are the incentives to get them there?

- **Response:** We are talking about the 100,000 miles of levees where you have to educate the people that live behind it to demand something be done, which will fall to the state and locals.

**Comment:** Land use may change behind a levee. The Committee needs to be aware of this and possibly make recommendations to account for this.

- **Response:** Burden could be put on developers to bring the levee up to the standard for tolerable risk.
- **Response:** This would be a local decision to put the burden on the developer or have locals decide to fix it themselves. This at least puts the discussion upfront in the process.
- **Response:** If a developer updates a levee to meet the 1% chance event, he would be free to build behind the levee, but we all agree that the level of protection would no longer be adequate for that new population. A tolerable risk assessment approach would help direct attention to this situation.

**Comment:** This group needs to consider the phasing of approaches.

**Comment:** In the Call for Action section of the strategic plan, there is a place holder for the future and what could happen with future development behind levees.

**Comment:** Terminology is important and needs to be consistently used and needs to be clear to the public. (Agreement) The credibility of the Committee's recommendations will be based on some of the words we use. We need to move away from 200 year or 500 year and need to talk about the events in a technical way. This will bring credibility to the whole report. We will change language to discuss probability of seeing a flood (1% event). Need to clarify the consequences from a flood versus the probability of a flood.

**Comment:** When we talk about funding and potential sources of funding, we need to think about what the actual amounts are and whether the costs are shared.

**Agreement:** The group agreed to house items at the national level generally and agreed to the rationale behind this recommendation.

## **Discussion of the Concept of a National Board**

The following comments reflect the Committee's initial discussion on whether the Committee will recommend a National Board. The comments represent individual Committee member's thoughts:

**Comment:** It is hard to imagine a National Board that does not have a federal lead agency. Even if there is a national board, there needs to be lead federal agency related to the national board. Is there agreement that if there is a national board, would a federal agency have a lead role?

- **Response:** The funding will come from a federal agency, which seems to ask the question how will the money get to the national level? Additionally, appropriations need to be addressed by a federal agency.
- **Response:** Does it have to have a single lead federal agency? The levee issue touches many agencies.
- **Response:** The National Board needs a lead regardless of the entity.

**Comment:** There could be a National Board which has several support agencies to provide staffing and implementation.

- **Response:** The Dam Safety Review Board had a similar model, but the Board did not influence funding. FEMA was the lead agency for the Dam Safety Review Board.

**Comment:** What do you want this Board to do? The Mississippi River Commission (MRC) today is not the MRC historically and does not have the influence it had decades ago. If the Board becomes a subset of an agency, it may become subservient. Questions to consider for the development of the Board include whether it should report to Congress directly or the White House directly. That Board needs to have a voice somewhere, or does it even want to have a voice?

**Comment:** One reason responsibility and influence decreases is because of a cut in funding.

**Comment:** The Marine Mammal Commission is its own entity and receives its own funding directly from Congress and provides recommendations to NOAA and FWS.

## **Friday, 7 November 2008**

### ***Logistics***

- The Committee held a discussion on the idea and timing for hosting a public information session and getting information out to the public. The Committee agreed that it is important to be open and transparent with the community and is interested in seeking feedback from and sharing its work with the public. The Committee agreed that they would like to host several public information sessions after January 15 to help bring the information to public.
  - Option: National Press Club morning meeting and online forum for public comment
  - Option: Public information session is being considered for the week of December 15 (December 16, 2008) possibly in St. Louis (MO), Sacramento (CA), and Kansas City (MO).

### **Briefing and Tour of New Orleans Levees**

Ms. Karen Durham-Aguilera, Director Task Force Hope, provided an overview of the New Orleans levee reconstruction project and showed a DVD to the Committee. The DVD is a public outreach tool to communicate the Risk Reduction System and will be made available to the Committee.

Ms. Durham-Aguilera stated that storm protection in New Orleans improves everyday. The system is still vulnerable and will remain so until the 2010 year level flood system is completed. When complete, the area will still be at risk in larger hurricanes, which is a public safety message of Task Force Hope.

Ms. Durham-Aguilera discussed the systems approach to risk reduction for hurricanes. The New Orleans system covers five parishes and 350 miles of levees and flood walls, most of which are operated by the parishes. With the varying topography in New Orleans, it is difficult to have one engineering solution and also difficult to communicate the system and components to the public.

The Task Force Hope mission is to strengthen and improve the system based on the event of a 1% storm occurring each year. The project is fully funded at \$14.3 billion. The overall current system programmatic schedule is based on the beginning and peak of hurricane seasons. The Task Force is funded in buckets and is not free to move money between tasks. There are still 150 contracts to award. The USACE recently issued the notice to proceed on the Inner Harbor Project. When USACE did programmatic cost analysis it informed the budget request using a risk and cost analysis to help predict out market costs. This cost estimate was reviewed by peers.

A technical report, which will be completed at the end of 2008, is evaluating the combination of using structural and non-structural means to protect against a Category 5 hurricane. Other documents informing the project include the State of Louisiana Master Plan and the Interagency Performance Evaluation Task Force (IPET). The final IPET report will be done by the end of 2008.

In order to combat decisions that were made at all governmental levels across decades, the USACE is looking at a comprehensive systems approach, using risk-informed decision making, communicating risk to the public, and relying on professional and technical expertise. Katrina opened access to many professionals to help lead us into the future. All the districts in the area contribute to delivering the products for Task Force Hope.

Task Force Hope includes a very informed community. USACE hosts innovative solution workshops to incorporate all stakeholders. The Task Force works with the State Insurance Commissioner and insurance firms because of the underwriting of risk.



After the initial emergency response events, USACE repaired all the damage back to pre-storm conditions. In 2006 and 2007, USACE conducted interim improvements. Once design criteria were completed, USACE began construction for improvement. These are massive systems which incorporate flood gates and pumping stations. The 17<sup>th</sup> Street canal system alone drastically decreased the level of flooding. Periodically over time, USACE will need to come back after 2011 and add lifts to levees to ensure that the designed level of protection is maintained.

The process for levees is different from flood walls. USACE has published what they intend to do for building to protection. The USACE has a public web site showing upcoming jobs to be awarded as well as projects that are currently ongoing. USACE is doing external peer review (WRDA 07, section 23.4. and 23.5). Some projects are complex enough that they will have their own peer review.

USACE does not design to the maximum probable flood event anymore. USACE designs for the effects of 152 storms which all take different tracks and have 63,000 hurricane hydrographs. The storm surge is what matters. USACE works with NWS and NOAA. When the NWS talks about a hurricane, they now communicate predicted surge. How do you communicate this information publically? The community can see the predicted depth of flood for different storm predictions. By the time the system is completed, flooding will be drastically reduced. If you have a reliable pumping station (at least 50%) you will have a working system. You can buy down risk, but you can not eliminate it as you will still have residual risk.

As time goes on, USACE gets pressure to relax the standards because communities want to be able to afford something. We will not relax the standards to make it more palatable. Most people here understand the risk and residual risk. You always need an evacuation plan when you live in a coastal area.

*Full briefing available to Committee members.*

**Question:** How will the USACE communicate the increase in residual risk after 2011 when subsidence and hydrology will increase the risk again?

- **Response:** There will need to be a continued investment in completed works. USACE developed a rough estimate framework of how much it will cost to revisit structures every three years to ensure the level of protection is maintained. USACE will update the maps once the system is complete and closed.

**Comment:** In New Orleans, most railroad embankments have flood gates which need to be closed by people on the ground.

**Comment:** USACE is complying with all NEPA regulations through alternative measures. USACE negotiated to highlight the project in 17 different environmental reports with NEPA compliance. This measure has helped the USACE move forward with projects as compliance is completed.

## **Discussion of Field Trip to New Orleans Flood Damaged Areas and Interim Pumping Station**

The Committee participated in a field trip to several USACE projects in the New Orleans area. The Committee viewed both the destruction and reconstruction projects in the area. The Committee

recognized a need to better measure how evacuations perform to help improve further evaluations. Additionally, there should be a component for parishes to communicate with levee owners to help provide input into evacuation decisions.

**Comment:** Working Group 1 will consider this concept of measurement and feedback on evacuations in order to ensure evacuation rates stay consistently high. The City of New Orleans has information that could be reviewed for information.

**Comment:** The Committee discussed using a report by Dr. Sebastian Jonklin that begins to review any correlation between flood depth and death rates. This could further inform classification system.

**Comment:** The Committee discussed that a lesson learned from the report outs is that the public understands the term “chance” but not “probability.”

**Comment:** USACE stated that they measure effectiveness on communication if the key message is being repeated in the media. Additional questions remain such as:

- How do you measure if the message is actually affecting behavior?
- How can we avoid complacency in evacuation?

## **Mississippi River Commission: History, Organization, Governance and Authorities**

The Mississippi River Commission (MRC) briefed the Committee, describing the evolution of the MRC, its purpose, governance structure, organization, membership and authorities. The presentation was provided by Mr. Stephen Gambrell (Executive Director, MRC), Hon. R.D. James (Member, MRC), and Mr. Charles Camillo (Deputy Executive Director and Historian, MRC).

### **Background**

The MRC was created because there was a schism between military and civilian engineering that paralyzed lawmakers. The objectives of the MRC included the federalization of flood control to overcome authorities, transcend regional entanglements, and create a federal entity that could set standards and move forward with a meaningful program. MRC is authorized to improve the river. The give safety phrase addressed navigation safety.

The MRC was established and enforced through several legislation enactments. The MRC was commissioned with the 1879 Originating Act. The 1928 Flood Control Act provided further functions and activities of the MRC as well as continuing the 1879 provisions. In 1928 a memorandum was signed which set out the primary functions of the MRC for implementing the Mississippi River and Tributary (MRT) project. The MRT project included inspection trips, public hearings, policy recommendations, project construction, and annual program work recommendations.

### **Mississippi River and Tributary Project (MRT)**

The Commission currently oversees the Mississippi River and Tributary Project. The MRT is a comprehensive flood control and environmental project with an investment of \$13.8 billion since 1928. The program is federally funded every year about \$350-400 million. There are other flood control features outside of levees, which include floodways, channel stabilization, and tributary basin improvements. There are four floodways with one floodway being a mile wide and 6 miles long. Channel stabilization is a navigation feature. Tributary basin improvements maximize the protection

provided by the levees. There are bi-annual levee inspections with the MRC and Corps Mississippi Valley District which provide an opportunity to share lessons learned.

The investment for the project has created a \$24-\$1 return on investment with the prevention of \$306 billion in damages. The levee system contains 3,727 miles of levees, with 3,486 miles of levees already in place. The system contains 2-3 million cubic feet of water – if a levee breaks, it floods states. The levees were turned over to the local sponsors after the levees were built through federal appropriations. The levees are operated and maintained by the local levee districts, with various ownership criteria. In one section of the levee district, the levees are inspected almost every day because of O&M criteria. There is a levee tax on property tax for those protected by a levee, which generates \$2-3 million a year in revenue to pay for the levee maintenance. Having ownership maintained by the locals gives them a seat at the table to care about their structures and ensure proper function and maintenance.

There was only one instance where the Levee Board could not raise the federal match quickly enough to use federal funding. The Levee Board eventually raised the money.

In terms of a lesson learned from the MRT, Levee Boards have more incentive to ensure levees are maintained when their members are elected to the position. The people overseeing the levee system should be the local people that it is protecting. This is the key to the MRT system.

Specific details about the MRT project include:

- All the levees are marked by a station number to communicate location information easily.
- Roads on top of the levees are maintained by the local Levee Board, with the Corps providing the gravel needed to keep up the levee as needed. The road is most important during flood fighting times, but opens to the public for general use as well.
- The local municipalities are prohibited from putting infrastructure through the levees.

### **MRC Governance**

The MRC is a Presidential Commission with three civilians (two of which must be engineers), three general officers from Corps, and one representative from NOAA. The Commanding Generals and NOAA go through a process to get appointed by the President, whereas the civilian members go right to the President and need a broad base of support. The civilians are appointed for nine-year terms as a part-time position with compensation of \$21,500 per year and travel reimbursement. The Commanding Generals'/Admirals' terms expire when they are transferred, replaced, or retire. Typically, the Commanding Generals have 2-3 year terms.

The Commission is designed to give greater civilian participation in Commission deliberations, combine expertise of national assets, and allow transcending of regional entanglements. Currently, the Corps representation is made up of the commanding general from the following three districts: Northwest division, the Mississippi Valley, and the Ohio Valley. There have only been 29 civilians on the Commission, which enables them to form long term relationships with legislators and partners.

The MRC listens to the concerns of those that live and work along the valley, assesses the challenges posed by the watershed, and partners to form relationships to address challenges. The MRC attends several listening sessions to increase accountability for getting the job done. The listening trips usually include several federal senate and congressman staff members. The Commission always visits the Lower Mississippi Valley and also systems outside of the MRT to help inform decisions that affect the system.

MRC votes are by simple majority, but once a vote is finalized, all members of the Commission sign the final report for a unified voice. All decisions try to account for the systems approach.

### **Process Impacts on Funding**

The funding for the MRT project comes through the normal appropriations process and has consistent visibility for the project. One key to success is this is a comprehensive approach to a systems project. No federal funding goes to the MRC. The MRC has oversight to prosecute the project. The MRT budget is prepared by the Corps and reviewed by the MRC. The MRT project funds the staff of the MRC which is a dual service between the Corps and the MRC. The MRT project would not last the funding challenges without the commission. The MRC has had a consistent budget around \$300 million since 2000 and also receives additional supplemental funding to help fund the projects. Half of the budget is for O&M and half is for new projects.

The MRC process begins with input from stakeholders and starts the MRC process by inspections with vested interests and partner with key stakeholders. The MRC decisions and policy recommendations are taken to the MRC president/MVD commander and task the projects to the MVD districts. As the process moves forward, the MRC president/MVD commander will send the information through a chain to reach the Administration/Congress.

*Full briefing available to Committee members*

### **Discussion of Committee Recommendations**

The Committee discussed the current rough drafted of the recommendations as a group to gather input for further consideration. The committee reviewed 19 initial recommendations and provided these draft recommendations for further review and consideration by the group.

**Comment:** Should the Committee make a general recommendation outside of its objective?

- Recommendation to develop a broader commission that looks at entire flood risk management system. Should there be a structure incorporated in such a recommendation? The Committee expressed support for this development.

The Committee also discussed the need to plan for process steps post January 15, which at this time does not include drafting legislation.

## **Saturday, 8 November 2008**

### **Discussion of the Strategic Plan Outline**

The Committee discussed the current outline of the strategic plan and provided minimal feedback on the elements currently outlined. The Committee expressed support and agreement on the outline.

## **Discussion of the Governance Structure**

Ms. Sam Riley Medlock delivered a presentation to the Committee on governance structure options. The presentation identified guiding principles to consider for evaluating governance models. Criteria that were explored for consideration included representation across disciplines and levels of government; qualification of leaders, members, and staff; and political independence.

Components to consider for the top-level governance may include legislation, appropriations, and top-level roles and relationships (Congress, Executive Branch, Agencies, Private Sector, Regulated Community, Delegated and Non-delegated community). Questions to consider pertain to the functions that the model can inform and options for staffing. The presentation gave an overview of five models for consideration. Four of the five models represent a commission in existence and filtered for the NCLS. The fifth model is not based on an existing commission or body, but represents one approach for consideration and discussion.

### **Model 1 – Based on the Marine Mammal Commission**

Congress would create a National Levee Safety Commission (three members appointed by POTUS), Committee of Advisors (nine members appointed by Commission Chair and in consultation with allied agencies), and Staff (full-time, career employees – Executive Director, Engineering Program Manager, Policy Program Manager, R&D Program Manager, Commission Liaison, General Counsel, and various analysts). The legislation does not state who the Commission needs to include and could be politically maneuvered. They are appointed for a term and it is not full time for Commissioners.

### **Model 2 – Based on the National Dam Safety Program**

The Act would create the Interagency Committee on Levee Safety (chaired by lead Agency director) which selects 11 members from federal agencies only. The National Levee Safety Review Board is chaired by the Agency and 12 members are selected as a multi disciplinary model. There are two full time FTEs.

### **Model 3 – Based on the Mississippi River Commission**

Please see presentation from Friday for additional information on the structure.

### **Model 4 – Based on the National Transportation Safety Board**

A National Levee Safety Board (an independent entity outside of Agency influence) is created with sub offices that communicate with OMB. The Board consists of five members appointed by POTUS and confirmed by the Senate for five year terms. The sub-offices are organized by specific topic areas. The Board allows for Administrative Law Judges, who are able to call hearings and issue subpoenas through civil proceedings. The legislation has specific numbers for authorizations for eight years to ensure funding was authorized. The National program administration and oversight function exist at an executive level by a stand alone agency.

### **Model 5 – New Proposed Model**

Congress creates through two Acts (National Levee Safety Act and the National Dam Safety Act) two independent Commissions that are multi-disciplinary which would combine for 23 members (11 members each and 1 shared chair) of multi-disciplinary, multi-sector experts with a joint staff.

This approach would get the two functions working together and out of each agency (Corps and FEMA respectively). The challenges and issues are different enough that they need different Acts, but a shared staff would make sense on the issues. The states might provide a successful model for this proposal and would require additional research. Keeping legislation separate would encourage separate funding.

### **Model 6 - Proposal for a hybrid between Model 5 and 6**

The structure would include an independently appointed and funded joint board with sub offices by topics. The benefit would be that the Levee Act and Dam Act have the same mission (flood control).

Additional models include the Millennium Challenge Corporation (Board of Agency heads and POTUS-appointed members) and the Nuclear Regulatory Commission (5 members appointed by POTUS with broad rulemaking and regulatory powers).

**Comment:** The NRC model is the least supported model because of the different dynamics between the two topics.

**Comment:** An independent commission seems to fare better for funding than when it is within an Agency.

**Comment:** The model five should consider being able to reach out to the Corps for staffing and expertise to work together to ensure that expertise is not lost.

**Comment:** Model 4 could report to the USACE instead of OMB in the model. Or there could be multiple agencies which are reported to, including FEMA.

**Comment:** Currently, this Board is driven by the internal politics of FEMA and this is a downfall for the Board.

Working Group 7 will continue to discuss the options for governance. There needs to be further consideration for what the National Levee Safety Board function should be as this dialogue continues to move forward. There may need to be an Executive Order to ensure levee-awareness across agencies. There also needs to be consideration for the independent Board to influence the political arm of government.

### **Discussion on Canal Classification**

The Committee discussed the inclusion of canals in the strategic plan and considerations for the possible incorporation of canals. It was proposed that canals, by themselves, are not part of the NLSA; however, structures along canals that constrain water flow (embankments, retaining walls) are subject to the Act. It might be difficult to establish the area of consequence, and therefore, hazard potential classifications. Canals will be difficult to specify. The Committee assumes federal canal structures are part of the NLSP. For federal canal structures, can States have jurisdiction over them? Can they be part of a State Levee Safety Program? Working Group 7 believes it is possible and there is precedence for this belief. The Committee discussion focused on canals where the federal government retains ownership and whether states can have jurisdiction over those structures.

Levees and canal structures should be exempt from the requirements of State or National Levee Safety Programs under the following conditions:

- A. *The levee or canal structure is already regulated by the federal government and is required to meet certain safety criteria (e.g. power canals regulated by the Federal Energy Regulatory Commission and subject to dam standards). To be exempt, the federal regulator must be an agency that does not own or operate the levee or canal structure, and the safety criteria meets or exceed the National Levee Safety Code.*

**Comment:** If the structure is being regulated by any federal agency using the National Levee Safety Code, the structure does not need to be regulated again under the NLSA. There also needs to be a way to ensure that the National Code is being regulated appropriately by other federal agencies. This discussion is believed to focus on approximately 1% of the levee structure population. The database and inventory is a different topic than regulation. A federal agency would be regulated until it meets or exceeds the National Code. There should not be an exemption upfront, but from a governance point there will be the ability to make these decisions at a later time.

- B. *A canal constructed completely within natural ground without any manmade structure such as an embankment or retaining wall to retain water and/or where water is retained only by natural ground.*

- C. *The levee or canal structure meets all of the following criteria:*

- *Not part of a federal flood control project,\**  
*and*
- *Not be an accredited levee by FEMA,\**  
*and*
- *Not be greater than 3 feet high,\**  
*and*
- *Not protect a population greater than 50 people,\**  
*and*
- *Not protect an area greater than 1,000 acres\**

*\* Tentative values proposed – used as placeholders*

**Comment:** Working Group 1 proposed to combine two recommendations and to clarify that there will be structures that are treated differently, and these differences would be handled under the National Levee Safety Code. There will be a finer level of detail within the Code to identify the different structures. The changes proposed to the Committee today were in response to specific written comments provided by the Review Team.

**Comment:** This should be clarified to demonstrate that a breach or break would not effect a population greater than 50 people.

**Comment:** There should be consideration for volume of water and the function of the canal. What do you do instead of going to the top of the canal as opposed to 500 year flood? Some canals you can and maybe should go to the top of the canal and this all ties into what is the function of the canal. There are some structures that were designed for a preliminary function, but are serving a second function.

**Comment:** There is a suggestion for setting as the cap the 500 year flood instead of the top of the levee.

## **Discussion of Future Meetings**

The Committee reviewed the proposed agendas for the next two meetings and discussed necessary changes to the proposed agendas. It was agreed that Larry Larson (ASFPM) would participate the morning of Thursday, December 11 to provide thoughts on the roll-out and how to move forward with legislation. Mr. Larson will not be an invited speaker and will only provide comments for the roll-out agenda topic.

The Committee agreed to arrange for boxed lunch for the Deerfield Beach meeting and to structure the meeting for working group sessions during the day and plenary sessions in the evening. The Committee agreed to discuss governance on Thursday.

The Committee will look to add a meeting the week of December 1, with consideration to host in the middle of the country. The meeting will involve additional working group sessions. The Committee recognized the possible need for an additional meeting the week of December 15.

## **Discussion of Programs and Procedures of a NLSP**

The Committee discussed the considerations identified by Working Group 7. There will be four major recommendations coming out Group 7 covering these areas. The discussion point is how to structure governance over all the necessary activities and entities.

The categories for aligning activities include options for:

- 1 – Activities recommended for implementation at the national level
- 2 – Activities recommended for implementation below the national level
  - Qualified federal, state, local, and regional agencies
  - Transition periods and unqualified agencies
- 3 – Activities recommended for implementation by owners/operators

The incentives and disincentives are the tools to change behavior, which need to be reviewed as a separate task within the Working Group. There is a need to review best practices of those that have done delegated programs to share the information with the entire Committee to help make further progress on the recommendations.

The Committee discussed the need to provide options on governance and on activities. The transition period will need to be a national program level of activities to give the states time to accept a delegated program.

The Committee helped identify discrete tasks for Working Group 7 to consider between meetings.

- Overall Governance Framework (for National Level Implementation, but taking into consideration other implementation levels) – Karin (Sam, Susan, Eric)
- Research Best Practices on Implementation of Delegated Activities (program you are aiming for, how have others done this) – David Garcia (John Sweeney, Rod)
- Sam will type up the CRS notes.
- Karin will type up the Denver meeting notes
- Utilize information sent from Tracy Meehan (found on public web site)



- *Crosswalk of Disincentives/Incentives and Programmatic Activities (analysis)* – Mike
- *Research Best Practices for Capacity Building (how do you get started)* – TBD

**Comment:** What activity is desirable to delegate? Which activity is critical to the program, but there is no one to delegate to?

There will need to be further discussion and consideration on owners and operators. This is a key area because 90% of levees are not owned by the federal government.

The Committee adjourned on Saturday, 8 November 2008 with the understanding that Working Groups will continue to further their recommendations for discussion in Deerfield Beach, Florida 18-21 November 2008.